

Top-load Sink/Laundry Combo.

Abstract

An automatic washing machine including a drum, a sink, connection means for water and waste line, which are assembled in one integrated unit. It looks like a vanity with a built-in laundry machine and could be installed in any bathroom, kitchen or any utility room, mobile home, RV or even a boat having standard provision for sink connection. It could replace any existing standard sink giving customer an additional laundry capability.

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International Class:	D06F 025/00; D06F 37/20.
Field of search:	68/17R, 20, 23.1, 24, 26, 140, 146, 173, 207; 188/129; 210/363, 364.

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Patent Application Front-loading Sink/Laundry Combo. Sent out September 12, 2003.

Claims:

1. A top-load sink/laundry combo, comprising:
a cabinet;
an automatic top-loading washing machine having a drum, which is suspended inside of the said cabinet;
a motor connected to the said drum;
washing process control and programming means;
connection means for water supply and a waste line;
a sink with a faucet mounted on the top of the cabinet and connected to the same water supply and a waste line;
shock absorbing wall anchoring means.
2. The top-load sink/laundry combo defined in claim 1 wherein said automatic top-loading washing machine is fitted for drying, another words it is washer/dryer combo.
3. The top-load sink/laundry combo defined in claim 1 wherein said automatic washing machine is removable attached to the cabinet under the sink.
4. The top-load sink/laundry combo defined in claim 1 wherein said automatic washing machine is pivottally attached to the cabinet under the sink.
5. The top-load sink/laundry combo defined in claim 2 wherein said automatic washer/dryer combo is removable attached to the cabinet under the sink.
6. The top-load sink/laundry combo defined in claim 2 wherein said automatic washer/dryer combo is pivottally attached to the cabinet under the sink.
7. The top-load sink/laundry combo defined in claim 1 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;
8. The top-load sink/laundry combo defined in claim 2 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;
9. The top-load sink/laundry combo defined in claim 2 wherein said dryer has a condensation device.
10. The top-load sink/laundry combo defined in claim 2 wherein said dryer has a ventilation means, which are direct connected to the waste line bypassing P-trap.
11. The top-load sink/laundry combo defined in claim 2 wherein said dryer has a check valve, which prevents sewer smell from entering laundry.
12. The top-load sink/laundry combo defined in claim 2 wherein said dryer equipped with retractable ventilation hose.
13. The top-load sink/laundry combo defined in claim 2 wherein said dryer equipped with lint trap filled with water, which is automatically changed every washing or rinse cycle.
14. A top-load sink/laundry combo, comprising:

a cabinet;
an automatic top-loading washing machine having a drum, which is suspended inside of the said cabinet;
a motor connected to the said drum;
washing process control and programming means;
connection means for water supply and a waste line;
a sink, which is pivotally mounted on horizontal axle to the top of the cabinet,
which allows to use said sink as an access door for said top-loading washing machine;
shock absorbing wall anchoring means.

15. The top-load sink/laundry combo defined in claim 14 wherein said washing machine is fitted for drying, another words it is washer/dryer combo.
16. The top-load sink/laundry combo defined in claim 14 wherein said automatic washing machine is removable attached to the cabinet under the sink.
17. The top-load sink/laundry combo defined in claim 14 wherein said automatic washing machine is pivotally attached to the cabinet under the sink.
18. The top-load sink/laundry combo defined in claim 15 wherein said automatic washing machine is removable attached to the cabinet under the sink.
19. The top-load sink/laundry combo defined in claim 15 wherein said automatic washing machine is pivotally attached to the cabinet under the sink.

20. The top-load sink/laundry combo defined in claim 14 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;
21. The top-load sink/laundry combo defined in claim 15 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;
22. The top-load sink/laundry combo defined in claim 15 wherein said dryer has a condensation device.
23. The top-load sink/laundry combo defined in claim 15 wherein said dryer has a ventilation means, which are direct connected to the waste line bypassing P-trap.
24. The top-load sink/laundry combo defined in claim 15 wherein said dryer has a check valve, which prevents sewer smell from entering laundry.

25. The top-load sink/laundry combo defined in claim 15 wherein said dryer equipped with retractable ventilation hose.
26. The top-load sink/laundry combo defined in claim 15 wherein said dryer equipped with water-filled self-cleaning lint trap and P-trap combo.

27. The top-load sink/laundry combo defined in claim 14 wherein said sink is splitted for at least two parts, where one part with a faucet is permanently

attached to the cabinet and another part is pivotally connected to horizontal axle and to a flexible waste line pipe.

28. The top-load sink/laundry combo defined in claim 14 wherein said sink is split for at least two parts, where one part with a faucet is permanently attached to the cabinet and another part is pivotally connected to horizontal axle and has a quick pressure connection (coupler) to waste line.

29. A top-load sink/laundry combo, comprising:
a cabinet;
a sink mounted on the top of the cabinet and connected to water supply and a waste line;
an built-in automatic top-loading washing machine with horizontally rotating drum, which is suspended inside of the said cabinet in accordance with the pitch of the said sink;
a motor connected to the said drum;
washing process control and programming means;
connection means for water supply and a waste line;
shock absorbing wall anchoring means.

30. The top-load sink/laundry combo defined in claim 29 wherein said washing machine is fitted for drying, another words it is washer/dryer combo.

31. The top-load sink/laundry combo defined in claim 29 wherein said automatic washing machine is removable attached to the cabinet under the sink.

32. The top-load sink/laundry combo defined in claim 29 wherein said automatic washing machine is pivotally attached to the cabinet under the sink.

33. The top-load sink/laundry combo defined in claim 30 wherein said automatic washing machine is removable attached to the cabinet under the sink.

34. The top-load sink/laundry combo defined in claim 30 wherein said automatic washing machine is pivotally attached to the cabinet under the sink.

35. The top-load sink/laundry combo defined in claim 29 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;

36. The top-load sink/laundry combo defined in claim 30 wherein P-trap is mounted flush to the wall and configured on a way that the water accumulated in its lower expanded tank-like part is used for lowering vibration of the cabinet;

37. The top-load sink/laundry combo defined in claim 30 wherein said dryer has a condensation device.

38. The top-load sink/laundry combo defined in claim 30 wherein said dryer has a ventilation means, which are direct connected to the waste line bypassing P-trap.

39. The top-load sink/laundry combo defined in claim 30 wherein said dryer has a check valve, which prevents sewer smell from entering laundry.

40. The top-load sink/laundry combo defined in claim 30 wherein said dryer equipped with retractable ventilation hose.

41. The top-load sink/laundry combo defined in claim 30 wherein said dryer equipped with lint trap filled with water, which is automatically changed every washing or rinse cycle.
42. The top-load sink/laundry combo defined in claim 30 wherein said dryer equipped with water-filled self-cleaning lint trap and P-trap combo.
43. The top-load sink/laundry combo defined in claim 29 wherein said sink is split for at least two parts, where one part with a faucet is permanently attached to the cabinet and another part is pivotally connected to horizontal axle and to a flexible waste line pipe.
44. The top-load sink/laundry combo defined in claim 29 wherein said sink is split for at least two parts, where one part with a faucet is permanently attached to the cabinet and another part is pivotally connected to horizontal axle and has a quick pressure connection (coupler) to waste line.
45. The top-load sink/laundry combo defined in claim 1 wherein said automatic washing machine is pivotally attached to horizontally suspended rotation axle in the bottom of the cabinet and having vibration-proof connection to the front panel, which is pivotally attached to the different horizontal rotation axle on the front of the cabinet.
46. The top-load sink/laundry combo defined in claim 2 wherein said automatic washing machine is pivotally attached to horizontally suspended rotation axle in the bottom of the cabinet and having vibration-proof connection to the front panel, which is pivotally attached to the different horizontal rotation axle on the front of the cabinet.
47. The top-load sink/laundry combo defined in claim 14 wherein said automatic washing machine is pivotally attached to horizontally suspended rotation axle in the bottom of the cabinet and having vibration-proof connection to the front panel, which is pivotally attached to the different horizontal rotation axle on the front of the cabinet.
48. The top-load sink/laundry combo defined in claim 15 wherein said automatic washing machine is pivotally attached to horizontally suspended rotation axle in the bottom of the cabinet and having vibration-proof connection to the front panel, which is pivotally attached to the different horizontal rotation axle on the front of the cabinet.

Description

Background of invention

The vast majority of building apartments have no space and no provision for stationary washers or washer/dryer combo. So the laundry in such apartments is a problem. Portable washer is a kind of solution, but it is always on your way when used and it always takes your valuable storage space when unused.

Brief description of the prior arts.

Washer/dryer combo, with condensation device similar to *Automatic washing machine fitted for drying* and described in a patent # 5,588,313 do not require ventilation, but is too heavy and bulky to be a convenient portable appliance. Well known are also built-in appliances like *Compact top loading dishwasher suitable for fitting inside furniture units* described in a patent # 4,739,781. This design requires separate kitchen cabinet.

It would be nice to have “Zero-space” stationary washer or washer/dryer combination, which could be located in a bathroom and does not require any additional provision for installation.

Summary of the Invention.

The invention relates to the field of automatic top-loading washing machines and washer/dryer combo.

The Top-load Sink/Laundry Combo consists of an automatic washing machine with or without drying capacity and the sink, which is mounted on the top of the cabinet. All this is assembled in one integrated unit (concealed laundry).

This combination utilizing the space under the sink for laundry machine by re-shaping both P-trap and the sink and provide the user with “Zero-space” stationary washer or washer/dryer combo. It is connected to water supply by standard flexible hoses and to waste line via modified flexible P-trap.

It resembles a vanity with built-in laundry machine under the sink. It could replace any existing standard sink giving customer convenience of laundry capability.

An additional advantage of this invention is in increased speed of the drying by condensation device because a part of hot and humid air from a dryer is directed to the waste water line behind the P-trap utilizing waste line’s ventilation pipes.

The check valve prevents bad waste line smell from returning back to dryer.

Brief description of the drawings.

Fig. 1 is an illustrative view of sink and washer combination. The drum with a front panel is shown in open position.

Fig. 2 is an illustrative view of drum and front panel swings open.

Fig. 3 is an illustrative view of pivotally mounted sink in closed position.

Fig. 4 is an illustrative view of pivotally mounted sink in open position.

Fig. 5 is an illustrative view of connections to a waste line.

Fig. 6 is an illustrative side view of sink, drum and drain locations.

Fig. 7 is an illustrative top view of sink, drum and drain locations.

Detailed description of the preferred embodiments.

The top-load sink/laundry combo (see Fig.1 and Fig. 5) consists of an automatic washing machine having a drum 1 and the sink 2 with a faucet 3, which is mounted on the top of the cabinet 4. All this is assembled in one integrated unit.

The unit is connected to water supply by flexible hoses (hook-ups) like typical sink and to waste line 7 by drainpipe 14 via modified flexible P-trap 5. P-trap 5 is located under the sink 2 flush to the wall 6.

Top-load units with horizontal rotation axle of the drum (required for tumbling) could be equipped with a heater, blower and vent and operate like washer-dryer combo.

In a process of drying all hot and humid air could be directed outside via regular or retractable ventilation hose.

When outside ventilation is not available a condensation device could be used. In order to increase the speed of the drying process with condensation device at least part of the hot and humid air is directed via ventilation hose 9 and coupling 10 to the waste line's ventilation pipe 8 bypassing the P-trap 5.

The check valve 11 prevents bad waste line smell from returning back to dryer.

In preferred embodiment (see Fig.1) the drum 1 and adjacent laundry related mechanics are permanently suspended inside of the cabinet 4. However, it could be mounted pivotally or removable. This gives customer convenience of better access for loading/unloading operations by removing the laundry (drum section) out of the sink by sliding out of the cabinet (like a drawer), rotation around vertical axle (like a door) or rotation around horizontal axle 18 (like on Fig.2).

In order to minimize the force required for relocation of the drum while assuring the safety of operations a motion-absorbing device 17 is connected between the drum 1 and a front door 12. A position-securing device (bar) 15, which is connected to the front door, allows locking the door in any position and prevents the drum from rotation when the door is open. When door is closed the bar 15 is pushed down.

Flexible P-trap 5 is positioned flush to the wall 6, which assures reliable connection during vibration and gives more space for a drum 1.

In order to decrease vibration of the cabinet the lower part of a P-trap made with tank-like expansion 13, which accumulates a few gallons of running wastewater.

This expansion 13 is attached to the cabinet and increases its weight and stability. In addition the cabinet is connected to the wall with vibration-absorbing anchors.

In different embodiment (see Fig.3 & 4) an access to the drum 1 is made by lifting the sink 2. The sink 2 is split for two parts. One part with a faucet 3 is permanently attached to the top of the cabinet and another part is pivotally connected to

horizontal axle. (see Fig. 6 & 7). The water out of the sink will be drained via flexible waste line pipe 16. The drain hole of the sink is moved off-center. It could be done as well without flexible waste line pipe using pressure connection to the rigid waste line pipe under the sink.